

WHAT IS CLAIMED IS:

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*AC*

1. A motion picture pseudo contour correcting method comprising the steps of:

(a) detecting a gray level shift from a focused pixel to an adjacent pixel, as gray level information of the focused pixel;

(b) detecting a motion vector indicative of a speed and a direction of motion of a picture from the focused pixel to another pixel, as motion information of the focused pixel; and

(c) outputting a corrected gray level signal based on input of an original signal of the picture, the gray level information, and the motion information.

2. The motion picture pseudo contour correcting method as set forth in claim 1, wherein:

said step (a) includes a sub-step (d) of selecting a correction pattern from among a plurality of correction patterns, based on the gray level information detected; and

said step (c) includes the sub-steps of:

(e) determining a correction gray level signal based on a logical formula corresponding to the correction pattern selected at said sub-step (d), and the gray level information and

the motion information of the focused pixel;  
and

(f) generating the corrected gray level signal by synthesizing the correction gray level signal determined at said sub-step (e) and the original signal.

3. The motion picture pseudo contour correcting method as set forth in claim 2, wherein in said sub-step (e), pixels affected by the motion vector are selected as prospective corrected pixels, among pixels that the motion vector passes, and correction gray level signals are generated with respect to the prospective corrected pixels.

4. The motion picture pseudo contour correcting method as set forth in claim 3, wherein at most 4 prospective corrected pixels are selected.

5. The motion picture pseudo contour correcting method as set forth in claim 2, wherein in said sub-step (e), a logical formula corresponding to the correction pattern selected in said sub-step (d) is selected to be applied, from among logical formulae of a plurality of types that correspond to a magnitude of the gray level

shift between the focused pixel and adjacent pixel.

6. The motion picture pseudo contour correcting method as set forth in claim 1, wherein:

    said step (a) includes a sub-step (d) of selecting a correction pattern from among a plurality of correction patterns, based on the gray level information detected; and

    said step (c) includes the sub-steps of:

        (g) recalling, based on the correction pattern, motion picture pseudo contour correction-use gray level values that have been previously determined and stored based on logical formulae corresponding to respective correction patterns, gray level information, and motion information; and

        (h) generating the corrected gray level signal by synthesizing a correction gray level signal composed of the motion picture pseudo contour correction-use gray level values and the original signal.

7. A motion picture pseudo contour correcting method in a gray level display method that utilizes at least a time division method in which one field period or one

frame period in image display is divided into a plurality of sub-fields, said motion picture pseudo contour correcting method comprising the steps of:

generating a motion picture pseudo contour correction-use signal according to gray level information of a focused pixel of a picture in a certain field or a frame, gray level information of a pixel adjacent to the focused pixel in the same field or in the same frame, and picture motion information detected regarding the picture of the field or the frame; and

outputting the motion picture pseudo contour correction-use signal with respect to an original signal of the picture of the field or the frame.

8. The motion picture pseudo contour correcting method as set forth in claim 7, wherein, to cause a pixel to display a certain gray level, a plurality of signal patterns for selection of light emission of the sub-fields are prepared, and the motion picture pseudo contour correction-use signal is selected from the plurality of patterns.

9. The motion picture pseudo contour correcting method as set forth in claim 7, wherein the motion picture pseudo contour correction-use signal is generated

with respect to not less than one pixel selected, according to a magnitude of a motion picture pseudo contour generated, from among a plurality of pixels arranged from the focused pixel in a direction of the motion of the picture.

10. The motion picture pseudo contour correcting method as set forth in claim 7, wherein the time division method is used in combination with a pixel division method in which one pixel is composed of a plurality of sub-pixels.

11. The motion picture pseudo contour correcting method as set forth in claim 7, wherein at most 4 pixels are selected, according to a magnitude of a motion picture pseudo contour generated, from among a plurality of pixels arranged from the focused pixel in a direction of the motion of the picture.

12. The motion picture pseudo contour correcting method as set forth in claim 7, wherein formulae that are used in generating the motion picture pseudo contour correction-use signal are formularized based on motion picture pseudo contour generation patterns according to respective gray level information of the focused pixel

and the adjacent pixels and the motion information.

13. The motion picture pseudo contour correcting method as set forth in claim 7, wherein formulae that are used in generating the motion picture pseudo contour correction-use signal are grouped in a block form, according to a predetermined range of gray level values in series that the focused pixel may take, and a predetermined range of gray level values in series that the adjacent pixel may take.

14. The motion picture pseudo contour correcting method as set forth in claim 7, wherein the detected motion information of the picture is divided into components in two directions crossing on a screen, and the motion picture pseudo contour correction-use signal is generated as to at least one of the two components.

15. An image display device comprising:

a gray level information detecting section for detecting a gray level shift from a focused pixel to an adjacent pixel as gray level information of the focused pixel;

a motion information detecting section for detecting a motion vector indicative of a speed and a direction of

a picture when the picture moves from the focused pixel to another pixel, as motion information of the focused pixel; and

a correction-use signal generating section for outputting a corrected gray level signal, based on an original signal of the picture, the gray level information, and the motion information that are inputted thereto.

16. The image display device as set forth in claim 15, wherein:

said gray level information detecting section selects a correction pattern from among a plurality of correction patterns, according to the gray level information detected; and

said correction-use signal generating section includes:

a computing section for determining a correction gray level signal, according to logical formulae corresponding to the correction pattern selected, and the gray level information and motion information of the focused pixel; and

a signal inserting section for generating a corrected gray level signal by synthesizing

the correction gray level signal determined by  
said computing section and the original signal.

17. The image display device as set forth in claim 15, wherein:

selects a correction pattern from among a plurality of correction patterns, according to the gray level information detected; and

includes:

a memory section for storing motion picture pseudo contour correction-use gray level values determined beforehand according to logical formulae respectively corresponding to the correction patterns, gray level information, and motion information; and

a signal inserting section for generating a corrected gray level signal by synthesizing the correction gray level signal composed of the motion picture pseudo contour correction-use gray level value and the original signal.

18. An image display device that executes gray-scale display by adopting at least the time division method in

which one field period or one frame period in image display is divided into a plurality of sub-fields, said image display device comprising:

a gray level information detecting section for detecting gray level information of a focused pixel in a picture of a certain field or frame, and gray level information of a pixel adjacent to the focused pixel in the same field or in the same frame;

a motion information detection section for detecting motion information of the picture in the field or the frame;

a correction-use signal generating section for generating a motion picture pseudo contour correction-use signal according to the respective detected gray level information of the focused pixel and adjacent pixel, and the detected motion information; and

a signal inserting section for outputting the motion picture pseudo contour correction-use signal to an original signal of the picture of the field or the frame.

19. An image display device that executes gray-scale display by adopting at least the time division method in which one field period or one frame period in image display is divided into a plurality of sub-fields, said image display device comprising:

a gray level information detecting section for detecting gray level information of a focused pixel in a picture of a certain field or frame, and gray level information of a pixel adjacent to the focused pixel in the same field or in the same frame;

a motion information detecting section for detecting motion information of the picture in the field or the frame;

a memory medium in which motion picture pseudo contour correction-use gray level values are stored that have been prepared beforehand along with their correspondence to gray level information of pixels that would become the focused pixel and adjacent pixel and motion information;

a signal inserting section for recalling a motion picture pseudo contour correction-use gray level value from said memory medium according to the respective detected gray level information of the focused pixel and the adjacent pixel and the detected motion information, and for outputting the recalled value as a motion picture pseudo contour correction-use signal to an original signal of the picture of the field or the frame.

20. An image display device that executes gray-scale display by adopting at least the time division method in

which one field period or one frame period in image display is divided into a plurality of sub-fields, said image display device comprising:

motion picture pseudo contour classifying means for detecting a magnitude, or a shape, or the both, of a motion picture pseudo contour occurring to a focused pixel in a picture of a certain field or frame, and for outputting recognition information of the magnitude, or the shape, or the both;

a memory medium in which stored are motion picture pseudo contour correction-use gray level values for correcting a motion picture pseudo contour, having been calculated beforehand for each magnitude, or each shape, or the both of a motion picture pseudo contour; and

signal inserting means for recalling a motion picture pseudo contour correction-use gray level value from said memory medium according to the recognition information outputted from said motion picture pseudo contour classifying means, and for outputting the recalled value as a motion picture pseudo contour correction-use signal to an original signal of the picture of the field or the frame.

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